



## 1. General information

Course: INORGANIC CHEMISTRY

Type: BASIC

Degree: 344 - CHEMICAL ENGINEERING

Center: 1 - FACULTY OF SCIENCE AND CHEMICAL TECHNOLOGY

Year: 2

Main language: Spanish

Use of additional languages:

Web site:

Code: 57709

ECTS credits: 6

Academic year: 2021-22

Group(s): 21

Duration: First semester

Second language: English

English Friendly: Y

Bilingual: N

Lecturer: JUAN FERNANDEZ BAEZA - Group(s): 21

Building/Office	Department	Phone number	Email	Office hours
Edificio San Alberto Magno	QUÍMICA INORG., ORG., Y BIOQ.	3472	juan.fbaeza@uclm.es	Monday and Wednesday from 18:00 to 19:00 h

Lecturer: SANTIAGO GARCIA YUSTE - Group(s): 21

Building/Office	Department	Phone number	Email	Office hours
Edificio San Alberto Magno (primer piso)	QUÍMICA INORG., ORG., Y BIOQ.	3477	santiago.gyuste@uclm.es	Tuesday and Thursday from 17:00 to 18:00 h.

Lecturer: AGUSTIN LARA SANCHEZ - Group(s): 21

Building/Office	Department	Phone number	Email	Office hours
Edificio San Alberto Magno	QUÍMICA INORG., ORG., Y BIOQ.	3499	agustin.lara@uclm.es	Monday and Wednesday from 17:00 to 18:00 h

Lecturer: ELENA VILLASEÑOR CAMACHO - Group(s): 21

Building/Office	Department	Phone number	Email	Office hours
Edificio San Alberto Magno (primer piso)	QUÍMICA INORG., ORG., Y BIOQ.	926052133	elena.villasenor@uclm.es	Wednesday and Friday from 17:00 to 18:00 h

## 2. Pre-Requisites

No prerequisites have been established, although it is recommended to have passed the subject of Fundamentals of Chemistry in the first year.

## 3. Justification in the curriculum, relation to other subjects and to the profession

The training received by students of Inorganic Chemistry is essential for the understanding, understanding, design and development of the most important industrial processes in the Chemical Industry. Most of the processes in the chemical industry are related to inorganic compounds such as water treatment, construction materials, polymeric materials, fertilizers, dyes, basic chemicals ( $\text{H}_2\text{SO}_4$ ,  $\text{NH}_3$ ,  $\text{NaOH}$ ,  $\text{HNO}_3$  etc), new materials (fibers, alloys, nanomaterials, etc), fuel cells, explosives.... The Inorganic Chemistry course is essential for the training of a Chemical Engineer and is practically related to all degree subjects, although we can cite: Separation Operations Chemical, Reaction Engineering Environmental, Technology Materials in Chemical, Engineering Electrotechnics and Electronics, Integrated Laboratory of Basic Operations and Chemical Reaction, Engineering Instrumentation and Control of Chemical Processes, Biochemical Engineering Process and Product Engineering Coal, Oil and Petrochemistry Basic Operations of the Food and Pharmaceutical Industry Risk Analysis, Safety and Occupational Health in the Chemical Industry Renewable Energies and Energy Evaluation of Chemical Processes

## 4. Degree competences achieved in this course

## Course competences

Code	Description
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
CB05	Have developed the necessary learning abilities to carry on studying autonomously
E04	Ability to understand and apply the principles of basic knowledge of general chemistry, organic and inorganic chemistry and their applications in engineering.
E24	Manipulate chemicals safely and environmentally
E25	Knowledge about integration of processes and operations
G03	Ability to solve problems with initiative, decision making, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of Chemical Engineering.
G14	ethical commitment and professional ethics
G18	Capacity for teamwork
G20	Ability to learn and work autonomously
G21	Ability to apply theoretical knowledge to practice
G22	Creativity and initiative

## 5. Objectives or Learning Outcomes

### Course learning outcomes

Description

### Additional outcomes

195112 Desarrollar su capacidad de trabajar en equipo.

## 6. Units / Contents

Unit 1:

Unit 2:

Unit 3:

Unit 4:

Unit 5:

Unit 6:

Unit 7:

Unit 8:

Unit 9:

Unit 10:

## 7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	CB02 CB03 CB04 CB05 E04 E24 E25 G03 G14 G18 G20 G21 G22	1.2	30	Y	N	
Problem solving and/or case studies [ON-SITE]	Workshops and Seminars	CB04 E04 G14 G18 G20 G22	0.3	7.5	Y	N	
Group tutoring sessions [ON-SITE]	Group tutoring sessions	E04 E24 E25 G03 G21	0.05	1.25	N	-	
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities	E04 E24 E25 G03 G21	0.8	20	Y	Y	
Progress test [ON-SITE]	Assessment tests		0.05	1.25	Y	N	
Study and Exam Preparation [OFF-SITE]	Self-study		3.6	90	Y	N	
<b>Total:</b>			<b>6</b>	<b>150</b>			
<b>Total credits of in-class work: 2.4</b>			<b>Total class time hours: 60</b>				
<b>Total credits of out of class work: 3.6</b>			<b>Total hours of out of class work: 90</b>				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

## 8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	0.00%	100.00%	Exam of all the contents of the theoretical and practical subject
Assessment of problem solving and/or case studies	20.00%	0.00%	
Laboratory sessions	10.00%	0.00%	
Theoretical exam	70.00%	0.00%	
<b>Total:</b>	<b>100.00%</b>	<b>100.00%</b>	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

### Evaluation criteria for the final exam:

#### Continuous assessment:

Evaluation criteria of the continuous assessment:

1. Exam with practical questions about the contents taught in the subject (70% of the mark)
2. Participatory resolution, in the classroom, of problem seminars (20% of the mark)
3. Laboratory practices (10% of the mark)

- To pass the course in each of the sections, a minimum of 4.0 / 10 will be required and the average must be equal to or greater than 5.0 / 10
- The completion of laboratory practices is mandatory.

#### Non-continuous evaluation:

Exam of all the contents of the theoretical and practical subject

### Specifications for the resit/retake exam:

Exam of all the contents of the theoretical and practical subject

### Specifications for the second resit / retake exam:

Exam of all the contents of the theoretical and practical subject

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
<b>Hours</b>	<b>hours</b>
Group tutoring sessions [PRESENCIAL][Group tutoring sessions]	1.25
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	20
Progress test [PRESENCIAL][Assessment tests]	1.25
<b>Unit 1 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 06-09-2021	<b>End date:</b> 09-09-2021
<b>Unit 2 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 13-09-2021	<b>End date:</b> 20-09-2021
<b>Unit 3 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 21-09-2021	<b>End date:</b> 28-09-2021
<b>Unit 4 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Group 21:	
<b>Initial date:</b> 29-09-2021	<b>End date:</b> 04-10-2021
<b>Unit 5 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 05-10-2021	<b>End date:</b> 14-10-2021
<b>Unit 6 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 18-10-2021	<b>End date:</b> 25-10-2021
<b>Unit 7 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 26-10-2021	<b>End date:</b> 04-11-2021
<b>Unit 8 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Group 21:	
<b>Initial date:</b> 08-11-2021	<b>End date:</b> 22-11-2021
<b>Unit 9 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 23-11-2021	<b>End date:</b> 02-12-2021
<b>Unit 10 (de 10):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	1
Group 21:	
<b>Initial date:</b> 09-12-2021	<b>End date:</b> 22-12-2021
<b>Global activity</b>	
<b>Activities</b>	<b>hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	30
Problem solving and/or case studies [PRESENCIAL][Workshops and Seminars]	8
Group tutoring sessions [PRESENCIAL][Group tutoring sessions]	1.25

Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	20
Progress test [PRESENCIAL][Assessment tests]	1.25
<b>Total horas: 60.5</b>	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	City	ISBN	Year	Description
Petrucci, Ralph H.	General chemistry: principles and modern applications	Prentice Hall		0-13-014329-4	2002	
Housecroft, Catherine E.	Inorganic chemistry	Prentice Hall		0-582-31080-6	2001	
Shriver, Duward F.	Inorganic chemistry	Oxford University Press		0-19-926463-5	2006	